AN ANALYSIS OF MILITARY PERSONALITY THROUGH SELF-REPORT

Herbert Milton Robertson

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

AN ANALYSIS OF MILITARY PERSONALITY

THROUGH SELF-REPORT

by

Herbert Milton Robertson

March 1975

Thesis Advisor: Frank M. Teti

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER	2. GOVT ACCESSION NO. / 3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle): An Analysis of Military Personality Through Self-Report	5. TYPE OF REPORT & PERIOD COVERED: Master's Thesis; March 1975
	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s): Herbert Milton Robertson	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Naval Postgraduate School, Monterey, California 93940	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS: Naval Postgraduate School, Monterey, California 93940	12. REPORT DATE: March 1975
	13. NUMBER OF PAGES: 65
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office): Naval Postgraduate School, Monterey, California 93940	15. SECURITY CLASS. (of this report): Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Evaluation, Organization, Personality Assessment, Personality Testing, Personnel, Selection, Training

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The purpose of this study was to determine if personality variables, through the use of a testing medium, would differentiate military officer personnel of the Navy Line and Staff who have had recent combat experience in Vietnam. If the psychological and sociological characteristics of the military personality, who has performed in an optimum manner in his intended role could be identified, a more positive program of selection,

DD FORM 1 JAN 73 1473 (Page 1) EDITION OF 1 NOV 65 IS OBSOLETE S/N 0102-014-6601 |

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

20. (Cont'd)
training and organization, at the outset, would be possible.

A secondary purpose of this study is to compare the combined military sample to a civilian sample, matched for general age, range, and socio-economic status for an evaluation of the military-civilian personality structure.

The Edwards Personal Preference Schedule (EPPS) is used as the representative testing vehicle to arrive at derived conclusions.

An Analysis of Military Personality Through Self-Report

by

Herbert M. Robertson
Lieutenant Commander, United States Navy
B.S., Arizona State University, 1962

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
March 1975

ABSTRACT

The purpose of this study was to determine if personality variables, through the use of a testing medium, would differentiate military officer personnel of the Navy Line and Staff who have had recent combat experience in Vietnam. If the psychological and sociological characteristics of the military personality, who has performed in an optimum manner in his intended role could be identified, a more positive program of selection, training and organization, at the outset, would be possible.

A secondary purpose of this study is to compare the combined military sample to a civilian sample, matched for general age, range, and socio-economic status for an evaluation of the military-civilian personality structure.

The Edwards Personal Preference Schedule (EPPS) is used as the representative testing vehicle to arrive at derived conclusions.

TABLE OF CONTENTS

I. INTRODUCTION ---------- 8

A. NEED FOR INVESTIGATION ---------- 8

B. STATEMENT OF THE PROBLEM: IDENTIFICATION OF THE HYPOTHESES ---------- 16

II. SURVEY OF RELATED LITERATURE ---------- 18

III. METHOD ---------- 27

A. SUBJECTS ---------- 27

B. TEST INSTRUMENT: THE EPPS ---------- 29

C. PROCEDURE ---------- 32

D. STATISTICAL PROCEDURES ---------- 33

IV. RESULTS AND DISCUSSION ---------- 42

A. EPPS DATA FOR THE SAMPLE URL OFFICERS --------- 42

B. EPPS DATA FOR THE SAMPLE STAFF OFFICERS ------- 42

C. EPPS DATA FOR THE SAMPLE OF CIVILIANS --------- 42

D. COMPARISON OF THE URL MILITARY AND STAFF MILITARY SAMPLES ---------- 44

E. COMPARISON OF THE COMBINED MILITARY AND CIVILIAN SAMPLES ---------- 44

V. SUMMARY ---------- 52

APPENDIX A: FREQUENCY DISTRIBUTION OF OCCUPATIONAL LEVELS AND REPRESENTATIVE OCCUPATIONS ------ 55

APPENDIX B: THE MANIFEST NEEDS ASSOCIATED WITH EACH OF THE 15 EPPS VARIABLES ---------- 56

APPENDIX C: EPPS PERCENTILE NORMS OF MEAN ---------- 59

APPENDIX D: EPPS T-SCORE CONVERSION DISTRIBUTION OF MEAN ---------- 60

BIBLIOGRAPHY ---------- 61

INITIAL DISTRIBUTION LIST ---------- 65

LIST OF TABLES

I. MEANS AND STANDARD DEVIATIONS FOR URL MILITARY OFFICERS ON 16 EPPS SCALES ---------- 40

II. MEANS AND STANDARD DEVIATIONS FOR STAFF MILITARY OFFICERS ON 16 EPPS SCALES ---------- 41

III. MEANS AND STANDARD DEVIATIONS FOR CIVILIANS ON 16 EPPS SCALES ---------- 43

IV. DIFFERENCE BETWEEN MEANS FOR URL MILITARY OFFICERS AND STAFF MILITARY OFFICERS ---------- 45

V. CONFIDENCE LIMITS OF DIFFERENCES BETWEEN MEANS FOR URL MILITARY OFFICERS AND STAFF MILITARY OFFICERS ---------- 46

VI. MEANS AND STANDARD DEVIATIONS FOR COMBINED TOTAL OF MILITARY OFFICERS ON 16 EPPS SCALES ---------- 47

VII. DIFFERENCE BETWEEN MEANS FOR COMBINED MILITARY OFFICERS AND CIVILIANS ---------- 48

VIII. CONFIDENCE LIMITS OF DIFFERENCES BETWEEN MEANS FOR COMBINED MILITARY OFFICERS AND CIVILIANS ---------- 50

I. INTRODUCTION

A. NEED FOR INVESTIGATION

Despite the current popular controversy over the impact of the military-industrial power complex, as noted by Lang [23] in his review of the traditional literature on the subject, little recent empirical investigation has been conducted into the personality structure of the military officer. This lack of investigation has not precluded some writers from forming rather definite opinions. These opinions, unfortunately, often reflect an unrealistic attempt to repudiate the military and therefore absolve themselves from the moral and distasteful requirement of service to the country. The military personality is often conceptualized as a "power-orientated" individual who derives great personal satisfaction from the death and wholesale destruction that constitutes the political act of war, while he disregards the primary interests of the society which he has sworn to serve.

Even a military officer has publicly voiced this sentiment. General (Retired) David M. Shoup, a former Commandant of the United States Marine Corps, and winner of the Congressional Medal of Honor, has charged that the officer corps view war as "an exciting adventure, a competitive game, and an escape

from the dull routines of peacetime." General Shoup further states:

> Civilians can scarcely understand or even believe that many ambitious military professionals truly yearn for wars and the opportunities for glory and distinction found only in combat. A career of peacetime duty is a dull and frustrating prospect for the normal regular officer to contemplate (p.54).

It is not the purpose of this study to examine the reasons for General Shoup's statements or to probe the current political climate that exists today in the United States. His statements merely illustrate the extent of the change in the public attitude during the past decade.

While there have been numerous studies by Stouffer [37] and others into occupational choice as related to personality factors and the leadership capability of potential or serving military personnel, little investigation has been made into combat behavior of the military personality. Not surprisingly, the only available study of military combat personality, Egbert, Meeland, Cline, Spickler and Brown [16], was completed by a military research agency which examined enlisted military personnel during the Korean conflict. This study is obsolete, both in terms of the time factor of a decade and in the use of enlisted personnel for subjects. The military officer comes from the same well-educated segment of the population holding the current anti-military views. A review of the literature does not reveal any current work being accomplished in this

area as related to the Vietnam conflict. It would seem appropriate to do so in light of the apparent change in the public attitude towards the military since the Korean War -- a change of attitude that is apt to have far-reaching consequences.

This study will investigate the relationships that may exist between certain personality variables, as measured by one self-report personality test instrument, using selected United States Navy officer participants in the Vietnam conflict. For example, does the Edwards Personal Preference Schedule which characterizes personality needs, differentiate the Unrestricted Line (URL) officer from the Supply Corps (Staff) officer in the same community or does the total military sample differ from the civilian population? Is the military officer a well-integrated and stable individual (as specified by this testing instrument) or does this profession attract certain personality types?

The present investigation of the personality structure of selected United States Navy officer participants volunteering for duty in Vietnam, as they might differentiate from other citizens was first suggested by a consideration of the altruistic motivation of these individuals. For what reasons do they place themselves in positions of danger and uncertainty in which they face the firm possibility of the loss of their own lives? Do they behave in this manner out of "love of

country," a need for achievement and recognition among their peers as reflected by the military decoration (the previously noted opinions of General Shoup), or are they simply manipulated by the multitude of variables affecting performance in group combat? Obviously, this overt behavior is the result of a complex interaction of environmental and even, at the far extreme, possibly genetic factors as noted by Fuller and Thompson [17] which cannot be investigated after the fact even if a suitable definition of the motivational construct and appropriate measurement techniques were available. Granted that even if the motivational construct were firmly established in psychology and experimental techniques developed, it would still be necessary to consider the total combat experience of the officer. The concept of field behavioral observation of the individual by a "social scientist," in the midst of the combat situation, in an attempt to fulfill the requirements of an experimental design, is somewhat humorous to the officer who has experienced the violent kaleidoscope that is war.

If these critical observational limitations could be surmounted, might we then proceed to a motivational consideration of the behavior? Nuttin [28] notes the motivational controversy that exists in this analysis:

> Psychologists are far from agreeing on the importance of motivation in the study and explanation of behavior. Some consider motivation a superfluous idea destined to

> disappear from the vocabulary of experimental psychology, while others regard it as the crucial principle of psychology and the key to understanding behavior (p. 1).

Some psychologists, then, would disregard the question of motivation and, instead, be concerned with the post hoc analysis of the broad behavior in an effort to examine it for constants which might have predictive value. This approach, especially for behavior which is molar and not adaptable for a stimulus-response investigation, is, of necessity, the approach of this study.

One personality instrument, the Edwards Personal Preference Schedule, hereafter referred to as EPPS, will be utilized to reach conclusions concerning the personality structure of the subjects. A common objection to personality tests of this nature is the possibility of test variable overlap. The EPPS was examined by Merrill and Heathers [26] and was found to be a relative independent measure for which it presumes to evaluate. The correlations between the scales of the EPPS and other testing vehicles of similar nature on a college counseling center sample were low and therefore concluded by the authors to be independent with the EPPS indicating the relative weight a person gives to various personal needs.

This relative independence of measures was one basis for selection of the EPPS in this study. However, there is no presumption that it is a pure measure. Cronbach [12] states

that: "There is at present no consensus among factor analysts as to the number of factors that have been reliably identified, the best organization of them, or their most appropriate names." No statement to the contrary is available to suggest that this lack of consensus concerning personality measurement has changed since Cronbach's statement.

Johngard and Ogilvie [29], in a similar examination of personality structure of individuals involved in hazardous occupations, utilized these instruments in an attempt to study competitive racing drivers by relating a number of personality variables to driver behavior. In addition, they attempted to find personality variables which might differentiate these individuals from others in this field. This, despite the initial emphasis given to the current social need for a psychological description of the military personality, is the prime objective of this study. If the psychological characteristics of the military personality, who has performed in an optimum manner, can be identified, then a program of selection, training, and organization of fighting units is possible.

Is this attempt to identify personality characteristics in the socio-political dimension, a reputable area of investigation in contemporary psychology? Some would assess this study to be obsolete while others would consider it necessary to await future developments of more precise instruments.

Cattell [7] notes that psychology should presently engage in the effort to identify the characteristics of political and military leaders utilizing available methods. The alternative being chance selection that may have less than desirable results.

The use of projective techniques (Thermatic Aperception Test, Rorschach, etc.) may be preferred, in personality study, by clinical psychologists. Sines [35] states:

> There is a great deal of readily expressed doubt that actuarial methods of prediction can be successful because, unlike the clinician, they fail to consider either the subtleties of the test data, the uniqueness of the human personality, the exceedingly complex ways in which test data relate to personality characteristics or behavior, or all of these (p. 133).

However, the availability and the location of the subjects made self-report instruments, with their inherent limitations, a necessity. Further, self-report instruments are adaptable to a large scale military selection program whereas projective techniques are not.

If the EPPS as with other self-report instruments are inadequate, it will be left to the academician-psychologist to develop improved measures in this area. The presently available test, with the limitations accepted, will be utilized to reach conclusions with the emphasis on the applied benefits of the results and not on the inadequacy of the test instrument. Despite the limitations, self-report instruments can be of

considerable value in providing information of the phenomenal worlds of the individuals tested -- information that assists in understanding and predicting behavior and which may not be obtainable in any other manner. This is noted by Cooper and McGaugh [10]:

> In the simple reflexive situation we can predict the result solely on the basis of the stimulus. In the complex behavior situation, phenomenological as well as stimulus information is necessary for prediction. In the understanding the individual's behavior and experience it is necessary to acquire a considerable amount of information about the individual's 'internal world,' since it varies so much from individual to individual and for the same individual from time to time. . . one thing these techniques have in common is that they express the information they elicit quantitatively. . . the scores are then used as a basis for inference concerning the individual's phenomenal field (p. 85).

It should be noted that the results of this study will be restricted to postdiction and a limitation will exist in the interpretation of the data since one must consider what changes in personality, either transient or permanent, may have occurred as a result of the combat or other Navy experiences. Generalizations from this study must also be limited by the obvious change in individuals, materiel, and tactics between conflicts. However, regardless of the time or location of the conflict, the threat of harm and the extremely personal nature of war remains the same and gives a basis for generalization. Answers to the questions posed by this study will be of interest despite the limitations.

B. STATEMENT OF THE PROBLEM: IDENTIFICATION OF THE HYPOTHESES

The purpose of the present study is to examine 100 Supply Corps (Staff) officers, 100 Unrestricted Line (URL) officers, both groups having served in Vietnam, and 60 non-military individuals, by utilizing the EPPS, in an attempt to differentiate these groups. Specifically, the general hypotheses of this study is stated as follows: The EPPS personality variables (as defined in Appendix B) of the URL officers will differ, with probability less than 5% ($p<.05$), on some variables, from the Staff officers. The direction of difference will be in favor of the URL officers, i.e., the URL officers will have higher mean scores on some scales. I predict that the URL officers will be higher on the ACH, DEF, ORD, DOM, END, and AGG scales. They will be lower on EXH, AUT, INT, SUC, ABA, and NUR scales. I cannot anticipate the direction of difference on the AFF, HET, and CHG scales. Again, the combined scales of both military groups will be compared with the civilian group and will differ, with the probability less than 5% ($p<.05$), on some scales. The direction of difference, of higher mean scores on some scales, will be in favor of the military groups. I predict the difference between these groups will be in the same direction as predicted above.

Disregarding the ability to differentiate, this study will have value by presenting a view of the personality structure of

the three groups, allowing a contemporary comparison of the military personality as it relates to the civilian personality.

The EPPS should illustrate positive differences in personality dimensions, with the military groups having higher needs on some variables.

II. SURVEY OF RELATED LITERATURE

The initial development of personality assessment instruments can be largely attributed to the requirements of the military services during World War I. However, with the multitude of military related personality studies of the past half century, little investigation has been conducted into the military personality as it exists in the combat environment. Many studies have been accomplished in the utilization of personality instruments or sociometric group situations for evaluating leadership potential for future application. For example, Bass and Coates [5] attempt to forecast officer potential using leaderless group discussion and Gleason [19] predicts leadership ability by modified leaderless group discussion. These are before-the-fact studies which, unfortunately, are of questionable validity since the criterion measures of these studies (success in training courses and sociometric ratings by other cadets and tactical officers of future combat performance), has little similarity to the actual conditions of combat.

Probably the most ambitious attempt to assess the military personality was the research accomplished by the Institute for Personality Assessment and Research at the University of California. MacKinnon [24] reports on the study in which 100

Air Force officers were subjected to an enormous range of procedures in order to assess officer effectiveness. The study was not effective primarily due to the low validity of the "overall military effectiveness" criteria. Independent criteria of officer effectiveness only correlated in the area of .30. Unstable criteria do not lend themselves to assessment by even the most valid assessment techniques.

While the military organization is primarily and understandably, both in interest and in the capability to examine the problem, ultimately interested in the individual officer's combat performance, the civilian social scientist has done minor theorizing in this area. Trites and Sells [38] have examined the question of combat performance: measurement and prediction in an attempt to answer the following questions: (1) Are ratings of performance and adjustment by peers and superiors, related to objective performance data? The authors concluded they were related. (2) To what extent are peer-superior ratings related to and thereby predictable from ratings which are in part based on information obtained from peers and superiors? The authors again conclude that the ratings are predictable. (3) Are combat criteria predictable by the precombat criteria of performance and adjustment? Out of a grouping of peer-superior ratings of competence, fairness, courage, responsibility, likability and discipline, it was

found that a complex personality dimension termed likability seemed to be one of the most enduring characteristics of those achieving a specific combat criteria. The primary criticism of this study, notwithstanding a discussion of what constitutes "likability," is the combat criterion which was the total number of combat hours flown. This would seem to be an inadequate measure of combat performance. Poor combat performers may amass combat flying hours.

Schachter [32], in a post hoc analysis, examines the combat performance of United States Air Force fighter pilots, during the Korean War, as it relates to affiliation. Clum and Mahan [8] reported in their research that attitudes were found to be directly related to combat effectiveness. Results suggest the possibility of developing an attitude scale by empirical means which is predictive of long term service performance. Barron [4] comments on his interviews with several hundred combat personnel who had been decorated for heroism during the Second World War:

> There began my special interest as a psychologist in courage, resourcefulness, flexibility, strength in meeting crises, the ability to rally from setbacks -- in brief, the manifestations of personal vitality and spirit (p. viii).

This statement is indicative of the many fruitful areas in which one might examine the combat experienced military personality for application in the areas of motivation, perception,

emotions, reactions, attitudes, values and prejudices -- all of which form the basis of human behavior and therefore personality.

The primary military study utilizing personnel from the combat environment was conducted by Egbert, et al., [16], United States Army Leadership Human Research Unit, Presidio of Monterey, California, under the technical supervision of The George Washington University Human Resources Research Office operating under contract with the Department of the Army. This study, entitled Fighter I: An Analysis of Combat Fighters and Non-Fighters, was accomplished as a first step in a long range effort to increase the number of good performers, or "fighters" in combat units.

It has long been recognized that some individuals perform in critical combat situations, while others do not. S. L. A. Marshall, Military Historian, states, in Men Against Fire, that during World War II, only about 15% of the men in conflict normally fired their weapons at the enemy during a firefight. In some cases, which he considered to be exceptional, the percentage went up to approximately 25% or 30%. Standish [36], commenting on an increase of firing rate to approximately 50% during the Korean War, substantiates Marshall's statements. While Marshall does not imply cowardice on the part of those who did not fire, Standish states that the non-firer places the

individual who is doing his job in jeopardy and is therefore doubly remiss. In Standish's opinion, the deficient member performs in this manner not as a result of his military training but because of his basic personality structure.

However, failure to fire weapons is only one aspect of poor combat performance and Fighter I was a positive effort to identify variables which constitute the "good" and "poor" combat performers. Prior to reviewing Fighter I, it should be noted that two other combat studies were conducted during this time frame. The Personnel Research Branch (PRB) of the Department of Defense and the Operations Research Office (ORO) of The John Hopkins University conducted somewhat similar investigations, although there were distinct differences in design, purpose, and execution. The ORO study explored the physiological effect of combat while the PRB study was a Sociometric rating study by non-commissioned officers on the men in their units in an effort to improve selection of personnel.

In Fighter I, 310 men, identified as good or poor fighters by the nature and number of first-hand observations reported by other men and the receipt of military valor decorations, were given a 40-hour battery of tests at the 45th Division School of Standards and Replacement Center located six miles north of Chu'unch'on, just below the 38th Parallel, Korea.

The following variables were found to be characteristic of military personnel in this study:

Fighter:

(1) Provides leadership, either as a normal function or as a replacement for the designated leader.

(2) Takes aggressive action.

(3) Performs supporting tasks under fire.

(4) Exhibits a high degree of personal responsibility.

Non-fighter:

(1) Actively withdraws under fire.

(2) Withdraws psychologically.

(3) Malingers.

(4) Defensively over-reacts.

(5) Becomes hysterically incapacitated.

The test battery consisted of 27 questionnaires and inventories yielding approximately 230 scores, and 60 objective tests yielding approximately 200 scores. The battery included: Personality questionnaires; interest tests; background and life history inventories; intelligence and aptitude tests; Military Information Test, attitude tests; projective tests; motivation tests; films on leadership and judging personality; humor, art, and music tests; apparatus tests; performance tests of personality; interviews; and buddy ratings. The California Psychological Inventory, Minnesota Multiphasic Personality Inventory,

16 Personality Factor Test, and The Strong Vocational Interest Blank are examples of the personality instruments administered.

Due to a lack of consistency of results obtained with racial subgroups within the population, analysis was limited to the native-born white sample. The following are findings of this study:

(1) The fighter is more intelligent, having a ten point higher mean score as indicated on the Aptitude Area I test.

(2) The fighter is more masculine. Both masculinity of interests as reflected in the Strong Vocational patterns and the masculinity-femininity scales of the personality measures differentiated the groups.

(3) The fighter is a "doer." The fighter participated in a large number of activities, recreations and hobbies. The fighter was more aggressive, more varied, and more active.

(4) The fighter is more socially mature; that is, more socially responsible and tolerant.

(5) The fighter is preferred by his peers. His peers expect him to do well in the military, to remain out of trouble, and to be trustworthy with money.

(6) The fighter had greater emotional stability. On appropriate test instruments they showed fewer symptoms of anxiety and ego weakness.

(7) The fighter had leadership potential as noted by higher scores on tests utilized to measure social ascendancy, status, participation, independence, role playing ability, dominance, and social extroversion.

(8) The fighter had greater health and vitality. He was an inch taller and eight pounds heavier on the average and suffered fewer psychosomatic ailments.

(9) The fighter had a more stable home life. This was indicated by a preponderence in the non-fighter families of the father having died before the boy was eighteen, the parent not having been married, or a general paternal disinterest with the mother becoming disciplinarian in which case the discipline was described as physical, frequent, and administered erratically.

(10) The fighter had a greater fund of military knowledge in the area of weapons and tactics but did not differ significantly in his knowledge of general subjects.

(11) The fighter exhibited greater speed and accuracy on performance tests. Reaction times, speed of decision, judgment, tapping, visual adaptation, and two-hand coordination all tended to be superior to that of the non-fighter.

The study concluded that (a) intelligence is a prime factor in fighting ability and that a disproportionate number of men of low mental ability will reduce the fighting potential of

the military organization; (b) the qualities of the fighters are potentially measurable and there is a firm possibility of identifying fighters by appropriate tests, and (c) if these qualities are measured, it will allow assignment of personnel to combat units and be useful in the selection of combat leaders.

III. METHOD

A. SUBJECTS

The Unrestricted Line Officers (URL) in the sample were officers in the ranks of Commander, Lieutenant Commander, and Lieutenant. Their mean age was 33.5 with a range of 26 to 39 years.

Utilizing a roster listing the URL officer personnel assigned to the Naval Postgraduate School, the sample of 100 was selected.

The Staff officers in the sample were officers in the ranks of Commander, Lieutenant Commander, and Lieutenant. Their mean age was 34.3 with a range of from 27 to 40 years. All were Supply Corps Officers and had performed differing but infrequently similar military duties.

The Supply Corps officer sample constituted Staff Officers presently attending the Naval Postgraduate School, with the remainder being selected from the listing "Change of Duty" section, gleened from prior editions of the Navy Supply Corps Newsletter.

Gauron [18] in his research with the EPPS suggests that test means between general adults and the research population indicates that male adults differ significantly as to their

needs when differences in age and social status occur. Therefore the civilian sample, frequency distribution of occupations, noted in Appendix A, was an attempt to match the military groups in general age range and socio-economic status. Due to the sampling procedure and the expense involved in using a professionally prepared testing vehicle, it was considered essential, to insure an adequate return rate of the test instruments. Other studies utilizing mail distribution of test materials in itself have experienced an approximate 50% rate which leaves doubt as to the personality characteristics of those not responding.

With this in mind, the civilian sample of 60 was selected with the assistance of an administrator and a professor of business administration at a leading University in Southern California, who were known to the author. Using the evening college as a population, the sample was selected on the basis of general age, and socio-economic range. Remaining criteria relevant to the civilian sample concluded that all participants be fully employed, therefore eliminating students merely attending night classes. From this sample, the mean age was determined to be 31.8, with a range of from 22 to 41 years, and corresponding to the military samples involved concurrently. There is admitted and obvious bias in the selection procedure of the civilian sample. However, few, if any, experiments

utilizing human subjects are true random samples of meaningful populations. Therefore, the assumption is made that the civilian sample is reasonably representative of the middle-class male population of contempory American society. If this assumption seems excessive then one should consider that few experiments would be published if it were necessary to show that the study properly permitted statistical inference concerning an important population, i.e., a population of interest to the readers of the study. A general listing of individuals known to the author as being within the experimental parameters can be considered more meaningful than a sample from the total population of males listed in the Monterey city telephone directory.

B. TEST INSTRUMENT: THE EPPS

The test materials consisted of the Edwards Personal Preference Schedule and related historical data. The EPPS was originally developed by Edwards [15] to provide measures of a number of independent, "normal" personality variables. The variables, which the scales propose to measure, were originally taken from Murray's list of manifest needs [27] and include fifteen separate variables and a measure of test consistency. The scales, as noted in the EPPS manual, are listed below:

1. Achievement (ACH)
2. Deference (DEF)

3. Order (ORD

4. Exhibition (EXH)

5. Autonomy (AUT)

6. Affiliation (AFF)

7. Intraception (INT)

8. Succorance (SUC)

9. Dominance (DOM)

10. Abasement (ABA)

11. Nuturance (NUR)

12. Change (CHG)

13. Endurance (END)

14. Heterosexuality (HET)

15. Aggression (AGG)

16. Consistency Score (CON)

Since Cronbach [11] first noted the phenomenon of response set, there have been numerous attempts to explore the tendency to answer test questions in certain ways, regardless of specific content. Edwards attempts to control the influence of social desirability response set by the use of a forced-choice structure in which pairs of items are scored for different variables and equated for the degree of independently judged social desirability present in each item of the pair. This control of social desirability influences is presumed to eliminate one method by which a participating individual can obtain a score which does not truly characterize him.

Rosen [30] introduces a closely related response set, that of personal desirability. This indicates a choice of traits on the basis of "how the individual would like to be," rather than "how the individual thinks he is as related to social desirability." Theoretically, personal desirability is linked to the self-actualization theories of Maslow and Rogers, in which the individual aspires to achieve the greatest possible self-development, that is, "how he would like to be."

Falsified responses, regardless of the response set, are of value if they can be detected, since this variable adds to the personality dimension. Borislow [6] examines the question of whether Edwards has been successful in eliminating "faking" and if it does occur, can this response behavior be detected? The consistency score is the only direct and immediate device for determining the "honesty" of the respondent's behavior. The consistency variable is based on fifteen duplicated items which are scored as a check on the consistency of the respondent in answering the inventory. It was found that participants, if given specific prior instructions to either fake responses in a personal or social desirability direction, can indeed fake in the desired direction. In addition, the consistency score was found to not be an adequate index on the EPPS. However, the authors conclude that the EPPS is not greatly susceptible

to the influence of fakability in terms of response sets, but that it may be faked by sophisticated participants.

Fakability is not considered to be a primary factor in the present study since the participants are not considered sophisticated in the area of personality testing.

C. PROCEDURE

The EPPS, with a cover instruction letter, was distributed or mailed to all participants in the second quarter, 1974. The return questionnaires were identified as to military by a code placed on the answer sheet, which consisted simply of either a "URL" or "STAFF," allowing placement into the proper experimental group. The civilian sample created no identification problems since it was returned in total by the educational facility chosen.

Sampling of this nature introduces uncontrolled variability in the possibility of variation due to unsupervised completion of the tests under a variety of conditions. To minimize this variation, participants were cautioned in the cover letter: (1) to complete the tests without assistance, and (2) to answer questions quickly with their first impression. To guard against "response set," participants were assured that their answers would be anonymous (return tests contained no identification, with the exception of the "URL" or "STAFF" on military tests and

and the occupation of the participant on the civilian test). Further, participants were not informed of the intended purpose of the study. Therefore, the assumption is made that variability on test completion and response set is equalized among the three groups.

Completed test instruments were hand scored. The EPPS scales were manipulated in raw score form, adult male norms with percentile scores listed on appropriate tables.

D. STATISTICAL PROCEDURES

Significant differences between means of the groups were computed by z test, one tail of the distribution considered, for those differences that were in the predicted direction. The z test, two tails for the distribution considered, was used for those differences which were opposite to the predicted direction.

It can be stated that there are those statisticians who would question this approach even though it can be safely asserted that most measurements in psychology and sociology yield scales which are somewhat between ordinal and interval scales, the EPPS being an example. They would further agree that such statistical inferences based on significance tests are inappropriate to anything less than interval requirements. Do statistics computed on a measurement scale which is at best

a poor fit to reality, therefore distribute differently, than the same statistics computed under conditions of perfect measurement? According to Baker, et al., [3], findings derived from their research study would indicate that the answer is no. They conclude that the research worker who has nothing better than an ordinal scale to work with may have a poor fit to reality, but at least he will not be led into making incorrect probability estimates. It is their opinion that statistical tests answer the questions they are designed to answer whether the measurements are weak or strong.

In response to the limited size sample of this study which traditionally, in classical statistics, would demand a statement that generalization of results is a hazardous undertaking, the following considerations must be examined.

Remaining within the framework of classical statistics, studies involving a small sample may have dramatic value to the study of human behavior. Do such statements as "sample of 10 for experimental group is too small," or "I'm not quite clear what one says with a sample of 20," etc., indicate that the small sample study should be discounted as being without value? To go to an absurd extreme, Dukes [14] states that studies with a sample of one (N = 1), cannot be dismissed as inconsequential. He notes the following studies: (a) Ebbinghaus's investigation of memory as "a landmark in the

history of psychology." (b) Bryan and Horter's report on learning plateaus. (c) Stratton's study in perception on inverted vision. (d) Kellogg's project in comparative psychology. (e) Cannon and Washburn's investigation into hunger motivation, and (f) Watson and Raynor's study of Albert's conditioned fear of a white rat.

If these studies can be ascribed to an earlier era of psychology which was unsophisticated in sampling statistics, then it should be noted that scores of N=1 studies have appeared in leading journals throughout the past 20 years. Obviously then, considering the precedents, small samples can have value. But, can one generalize the results or do they remain tentative findings suggesting hypotheses which must be verified by future research utilizing large samples? Most contemporary academicians would undoubtedly agree to the latter. Is this, in fact, an assumption which is correct? Rosenthal and Gaito [31] report a study in which 10 graduate students and 9 members of the faculty at the University of North Dakota (the faculty members all holding doctoral degrees), were asked to rate their confidence in results of a group of hypothetical studies for a variety of probability values, and for samples of 10 and 100. The results were a substantially greater confidence in results associated with the larger sample size for the same probability values. However, the larger the

sample the more likely one will reach significance rejecting the null hypothesis. But, if the null hypothesis can be rejected with a small sample it is truly indicative of a strong deviation from null in the population. As Baken [2] states:

> The seriousness of this confusion may be seen by again referring back to the Rosenthal and Gaito [31] study and the remark by Berkson which indicate that research workers believe that a large sample is better than a small sample. We need to refine the rhetoric somewhat. Induction consists in making inferences from the particular to the general. It is certainly the case that as confirming particulars are added, the credibility of the general is increased. However, the addition of observations to a sample is, in the context of statistical inference, not the addition of particulars but the modification of what is one particular in the inference model, the sample aggregate. In the contest of statistical inference, it is not necessarily true that 'a large sample is better than a small sample.' For, as has been already indicated, obtaining a significant result with a small sample suggests a larger deviation from null in the population, and may be considerably more meaningful. Thus more particulars are better than fewer particulars on the making of an inductive inference; but not necessarily a larger sample (p. 432).

Baken further suggests that a subset of parameters (loose null) be equated with the null hypothesis (sharp null) allowing the investigator to make a decision of how much of a variation between conditions actually makes a difference. While the loose null, with additional situational information, allows a decision, the classical statistical approach is a consideration of a sharp null (which one has no reason to accept in the first

place) leading only to the assertion that the null may possibly be disproved, while never initially proven or established.

In order to treat the data of the present study in this manner, the addition to the z test of significance, 95% confidence intervals for the true differences between means were computed. This will allow the conclusion that one may have 95% confidence that the true difference between the group means falls between the listed parameters. This will allow the reader to make a decision whether or not there is anything important in the results. One can make a choice or decision with the results without the necessity to accept or reject the null hypothesis.

IV. RESULTS AND DISCUSSION

In order to present the data and its interpretation in the most clear and condensed form, the results and discussion will be presented in a combined format.

After noting the percentage rate of return of the test instrument, the first section will present the EPPS data for each of the three groups, followed by a comparison of the Unrestricted Line versus Staff military groups and a comparison of the combined military groups versus the civilian group. The second section will discuss the success of this study in achieving discrimination between the military groups as a basis for a military program of selection, training, and organization of fighting units.

The results of the sampling procedure was considered to be adequate. The experimental groups replied as follows:

Staff military officers -- 82 out of 100 -- 82%

Unrestricted Line officers -- 76 out of 100 -- 76%

Civilians -- 60 out of 60 -- 100%

Overall return rate: 218 out of 260 -- 84%

TABLE I
MEANS AND STANDARD DEVIATIONS FOR URL MILITARY OFFICERS ON 16 EPPS SCALES

Scale	Mean	S.D.	@EPPS Percentile Norms of Mean	&EPPS T Score Conversion Distribution of Mean
ACH	17.70	3.29	71	11.5 - 19.7
DEF	11.79	3.73	61	7.6 - 14.7
ORD	13.16	3.96	79	10.3 - 14.5
EXH	13.40	5.87	42	11.0 - 18.0
AUT	13.43	2.68	46	10.0 - 19.0
AFF	12.63	2.83	33	10.6 - 19.3
INT	14.20	2.66	41	11.0 - 21.5
SUC	8.81	4.09	40	6.0 - 15.5
DOM	18.25	4.82	57	12.5 - 22.5
ABA	11.39	4.60	48	7.5 - 17.0
NUR	8.98	3.64	18	9.0 - 19.0
CHG	17.49	3.28	67	11.0 - 20.3
END	14.48	4.15	66	7.5 - 18.0
HET	19.42	6.10	63	12.0 - 23.0
AGG	13.90	4.90	64	8.0 - 17.5
*CON	11.76	1.68	62	9.6 - 13.3

@ The percentile corresponding to a given mean score is a measure of the score's relative position in the complete distribution of raw scores for the EPPS normative test group. (Appendix C)

& Conversion of standard score distributions (T scores) to raw scores were considered "average" by the EPPS if they fell within this range. (Appendix D)

* Consistency Variable - Scores of 11 or above were considered acceptable by the EPPS normative test group.

TABLE II
MEANS AND STANDARD DEVIATIONS FOR STAFF MILITARY OFFICERS ON 16 EPPS SCALES

Scale	Mean	S.D.	@EPPS Percentile Norms of Mean	&EPPS T Score Conversion Distribution of Mean
ACH	17.77	3.85	71	11.5 - 19.7
DEF	11.15	3.83	53	7.6 - 14.7
ORD	13.00	4.84	78	10.3 - 14.5
EXH	12.42	3.62	31	11.0 - 18.0
AUT	13.65	3.97	48	10.0 - 19.0
AFF	13.73	3.18	42	10.6 - 19.3
INT	13.85	4.82	38	11.0 - 21.5
SUC	9.15	4.60	43	6.0 - 15.5
DOM	18.04	4.77	54	12.5 - 22.5
ABA	10.92	4.45	44	7.5 - 17.0
NUR	9.71	4.34	21	9.0 - 19.0
CHG	18.31	4.62	73	11.0 - 20.3
END	14.69	3.86	67	7.5 - 18.0
HET	19.85	5.14	66	12.0 - 23.0
AGG	12.38	4.32	51	8.0 - 17.5
*CON	11.81	1.88	66	9.6 - 13.3

@ The percentile corresponding to a given mean score is a measure of the score's relative position in the complete distribution of raw scores for the EPPS normative test group. (Appendix C)

& Conversion of standard score distributions (T scores) to raw scores were considered "average" by the EPPS if they fell within this range. (Appendix D)

* Consistency Variable - Scores of 11 or higher were considered acceptable by the EPPS normative test group.

A. EPPS DATA FOR THE SAMPLE URL OFFICERS

Table I shows the means and standard deviations of the total sample of Unrestricted Line officers. All scores are expressed in EPPS raw scores with derived percentile scores and T score distributions noted. Utilizing the EPPS conversion of percentiles into T scores (Appendix D), the only significant deviation was in the low need for nurturance. The remaining scales are within the T score range of 40 to 60. The nurturance scale mean of 8.98 (11 percentile) indicates a group which lacks kindness and sympathy, generosity with others, and the need to show affection. In short, this group exhibits a low need for others.

B. EPPS DATA FOR THE SAMPLE OF STAFF OFFICERS

Table II shows the means and standard deviations of the total sample of Staff officers. All scores are expressed in the same form as in the URL officer group. Only moderate deviations from the norm were found and no variations were considered to be noteworthy. All scales are within the T score range of 40 to 60.

C. EPPS DATA FOR THE SAMPLE OF CIVILIANS

Table III shows the means and standard deviations of the total sample of 60 civilians. All scores are expressed in the same form as in the URL military officer group. All scores are

TABLE III
MEANS AND STANDARD DEVIATIONS FOR CIVILIANS
ON 16 EPPS SCALES

Scale	Mean	S.D.	@EPPS Percentile Norms of Mean	&EPPS T Score Conversion Distribution of Mean
ACH	16.77	3.60	64	11.5 - 19.7
DEF	11.40	4.39	57	7.6 - 14.7
ORD	12.06	4.53	72	19.3 - 14.5
EXH	13.28	3.95	41	11.0 - 18.0
AUT	14.96	3.92	61	10.0 - 19.0
AFF	14.08	4.31	46	10.6 - 19.3
INT	14.49	4.52	42	11.0 - 21.5
SUC	9.83	4.40	48	6.0 - 15.5
DOM	16.84	5.18	43	12.5 - 22.5
ABA	11.37	5.13	49	7.5 - 17.0
NUR	11.44	4.46	34	9.0 - 19.0
CHG	16.16	3.73	58	11.0 - 20.3
END	14.06	5.26	64	7.5 - 18.0
HET	18.41	6.28	55	12.0 - 23.0
AGG	13.58	3.58	62	8.0 - 17.5
*CON	11.88	1.75	64	9.6 - 13.3

@ The percentile corresponding to a given mean score is a measure of the score's relative position in the complete distribution of raw scores for the EPPS normative test group. (Appendix C)

& Conversion of standard score distributions (T scores) to raw scores were considered "average" by the EPPS if they fell within this range. (Appendix D)

* Consistency Variable - Scores of 11 or above were considered acceptable by the EPPS normative test group.

within the T score range of 40 to 60 as they would assume to have been since the T score sampling was originally derived from a larger civilian sampling.

D. COMPARISON OF THE URL MILITARY AND STAFF MILITARY SAMPLES

Table IV denotes the difference between means for the military groups and the z test results. There was a significant difference on the affiliation and aggression scales. The URL military group was lower on the need to be with others and the need to form strong attachments while indicating a higher need for externalizing hostility verbally, arguing for a point of view, and attacking contrary opinions.

Significance on only two EPPS variables does not adequately permit differentiation between the military groups. Table V lists the 95% confidence limits of the difference between means of the two military groups.

E. COMPARISON OF THE COMBINED MILITARY AND CIVILIAN SAMPLES

Table VI shows the means and standard deviations of the total military sample. Table VII denotes the difference between means for the combined military and civilian groups and the z test results. There appeared to be significant difference on the achievement, dominance, autonomy, nurturance, and change scales. An examination of this data indicates some consistent trends of common personality traits, as measured by the EPPS,

TABLE IV

DIFFERENCE BETWEEN MEANS FOR URL MILITARY OFFICERS AND STAFF MILITARY OFFICERS

Scale	$\bar{X}_{Staff} - \bar{X}_{URL}$	Z
ACH	.07 ##	.12
DEF	-.64 #	1.06
ORD	-.16 #	.23
EXH	-.98 ##	1.25
AUT	.22 #	.41
AFF	1.10 ##	2.29 ***
INT	-.35 ##	.57
SUC	.34 #	.49
DOM	-.21 #	.27
ABA	-.47 ##	.65
NUR	.73 #	1.15
CHG	.82 ##	1.28
END	.21 ##	.33
HET	.43 ##	.48
AGG	-1.52 #	2.06 ***
CON	.05 ##	.18

*** probability $<.05$

Mean difference in predicted direction. (1-tailed test)

Mean difference opposite predicted direction. (2-tailed test)

TABLE V

CONFIDENCE LIMITS OF DIFFERENCES BETWEEN MEANS FOR URL MILITARY OFFICERS AND STAFF MILITARY OFFICERS

Scale	$\bar{X}_{Staff} - \bar{X}_{URL}$	95% Confidence Limits
ACH	.07 ##	-1.04 ---- 1.18
DEF	-.64 #	-1.63 ---- .35
ORD	-.16 #	-1.31 ---- .99
EXH	-.98 ##	-2.52 ---- .17
AUT	.22 #	- .66 ---- 1.10
AFF	1.10 ## ***	.16 ---- 2.04
INT	-.35 ##	-1.55 ---- .85
SUC	.34 ##	- .80 ---- 1.49
DOM	-.21 #	-1.47 ---- 1.05
ABA	-.47 ##	-1.88 ---- .94
NUR	.73 #	- .32 ---- 1.78
CHG	.82 ##	- .42 ---- 2.06
END	.21 ##	-1.04 ---- 1.46
HET	.43 ##	-1.30 ---- 2.20
AGG	-1.52 # ***	-2.73 ---- -.31
CON	.05 ##	- .51 ---- .61

Note: The 95% column indicates the parameters for which one has confidence that the true difference between the means falls between these extremes.

*** probability $<.05$

Mean difference in predicted direction. (1-tailed test)

Mean difference opposite predicted direction. (2-tailed test)

TABLE VI
MEANS AND STANDARD DEVIATIONS FOR COMBINED TOTAL OF MILITARY OFFICERS ON 16 EPPS SCALES

Scale	Mean	S.D.	@EPPS Percentile Norms of Mean	&EPPS T Score Conversion Distribution of Mean
ACH	17.74	3.58	71	11.5 - 19.7
DEF	11.46	3.78	57	7.6 - 14.7
ORD	13.08	4.42	79	10.3 - 14.5
EXH	12.89	4.70	36	11.0 - 18.0
AUT	13.55	3.35	48	10.0 - 19.0
AFF	13.20	3.01	38	10.6 - 19.3
INT	14.02	3.78	39	11.0 - 21.5
SUC	8.99	4.35	42	6.0 - 15.5
DOM	18.14	4.79	55	12.5 - 22.5
ABA	11.15	4.52	46	7.5 - 17.0
NUR	9.36	4.00	20	9.0 - 19.0
CHG	17.92	3.98	70	11.0 - 20.3
END	14.59	3.99	67	7.5 - 18.0
HET	19.64	5.60	64	12.0 - 23.0
AGG	13.11	4.60	58	8.0 - 17.5
*CON	11.79	1.78	61	9.6 - 13.3

@ The percentile corresponding to a given mean score is a measure of the score's relative position in the complete distribution of raw scores for the EPPS normative test group. (Appendix C)

& Conversion of standard score distributions (T scores) to raw scores were considered "average" by the EPPS if they fell within this range. (Appendix D)

* Consistency Variable - Scores of 11 or above were considered acceptable by the EPPS test group.

TABLE VII

DIFFERENCE BETWEEN MEANS FOR COMBINED MILITARY OFFICERS AND CIVILIANS

Scale	$\bar{X}_{Civ} - \bar{X}_{CM}$	Z
ACH	-.97 #	1.78 ***
DEF	-.06 #	.09
ORD	-1.02 #	1.47
EXH	.39 #	.63
AUT	1.41 #	2.41 ***
AFF	.88 ##	1.43
INT	.47 #	.69
SUC	.84 #	1.25
DOM	-1.30 #	1.70 ***
ABA	.22 #	.29
NUR	2.08 #	3.12 ***
CHG	-1.76 ##	2.97 ***
END	-.53 #	.70
HET	-1.23 #	1.34
AGG	.47 ##	.79
CON	.09 ##	.33

*** probability $<.05$

Mean difference in predicted direction. (1-tailed test)

Mean difference opposite predicted direction. (2-tailed test)

between the two groups. The combined military group is characterized as being higher in the need to do one's best, be successful, accomplish something of significance, be a leader, make group decisions, persuade and influence others, and to do new and difficult things. Conversely, the combined military group had a low need to be independent of others in making decisions, to avoid responsibilities and obligations, or to be with others and form strong attachments.

Table VIII lists the 95% confidence limits of differences between means of the two groups.

It should be noted, prior to generalization of these results to large groups, that a specified score on any of the EPPS scales may indicate trait strength, a combination of low trait strength and response set contamination, or unknown contamination.

The results of this study indicate that there is little significant differentiation on the EPPS between the URL military and the Staff military officer group. Only the test variables of Affiliation and Aggression were significant indicating that the EPPS is questionable as an applicable instrument for differentiating the URL officer from the Staff officer performer.

It would be appropriate for the military services to conduct a long-term study in which large numbers of incoming personnel are tested to obtain complete psychological and sociological

TABLE VIII

CONFIDENCE LIMITS OF DIFFERENCES BETWEEN MEANS FOR COMBINED MILITARY OFFICERS AND CIVILIANS

Scale	$\bar{X}_{Civ} - \bar{X}_{CM}$	95% Confidence Limits
ACH	-.97 # ***	-1.87 ---- -.07
DEF	-.06 #	-1.12 ---- 1.00
ORD	-1.02 #	-2.16 ---- .12
EXH	.39 #	- .63 ---- 1.41
AUT	1.41 # ***	.45 ---- 2.37
AFF	.88 ##	- .33 ---- 2.09
INT	.47 #	- .65 ---- 1.59
SUC	.84 #	- .27 ---- 1.95
DOM	-1.30 # ***	-2.56 ---- .04
ABA	.22 #	-1.03 ---- 1.47
NUR	2.08 # ***	.98 ---- 3.18
CHG	-1.76 ## ***	-2.92 ---- -.60
END	-.53 #	-1.82 ---- .66
HET	-1.23 #	-2.74 ---- .28
AGG	.47 ##	- .70 ---- 1.64
CON	.09 ##	- .44 ---- .62

Note: The 95% column indicates the parameters for which one has 95% confidence that the true difference between the means falls between these extremes.

*** probability $<.05$

Mean difference in predicted direction. (1-tailed test)

Mean difference opposite predicted direction. (2-tailed test)

descriptions of the pre-military individual. Combat units could then be retested, before and after combat operations or sustained periods in a combat zone of operations allowing identification of the two performers, in order to determine the change in individual descriptions, and in an effort to identify discriminating instruments for selection purposes. Strong emphasis should be given, in future studies of military personality assessment, to refining and strengthening whatever criterion measure is utilized. In an area of questionable validity of test instruments, it is essential that the criteria be valid.

In conclusion, then, it would seem that the value of this study is in the description of the personalities, as depicted by the EPPS, and not in the lack of significance levels which consequently did not adequately allow differentiation between the military groups.

Despite its overwhelming emphasis in psychology and sociology, value does not necessarily require statistical significance. And, in light of classical statistics, this may be the primary message of this thesis.

V. SUMMARY

Despite the current controversy over the impact of the military-industrial power complex, little recent empirical investigation has been conducted into the personality structure of the military officer. Initial development in the area of personality assessment can be largely attributed to the requirements of the military services during World War I. While there have been numerous studies into occupational choice as related to personality factors and leadership capability of potential or serving military personnel, little investigation has been made into combat behavior of the military personality.

It was the purpose of this study therefore, to investigate the relationships that may exist between certain personality variables, as measured by the Edwards Personal Preference Schedule (EPPS), using selected U. S. Navy officer participants who had seen duty in the Vietnam conflict. If the psychological and sociological characteristics of the military personality, which had performed in an optimum manner, could be identified, then a program of selection, training, and organization of fighting units would be possible. A secondary purpose of this study was to compare the combined military officer group to a

civilian sample matched for general range and socio-economic status for an evaluation of the military-civilian personality structure.

The results using the EPPS on the officer participants indicated that there were significant differences in personality on the affiliation and aggression scales but, while these scales were significant, they represented only two of the 16 EPPS variables. Greater success however was experienced in differentiating the military officer from his civilian counterpart. There appeared to be significant personality differences in the areas of achievement, dominance, autonomy, nurturance, and change.

Results of this study conclude that the use of the EPPS (as representing existing personality testing vehicles), for differentiating between the military groups for personnel selection or training would be questionable and of limited value. To the contrary, however, using the EPPS to determine possible differences in the personality structure of the military officer and his civilian counterpart for initial selection into the services may be more promising.

It would be appropriate therefore to recommend that the military services undertake a long-term study in which large numbers of incoming personnel could be tested to obtain complete psychological and sociological descriptions of the pre-military

individual. Likewise, proven performers should be re-tested in order to determine the change in individual descriptions. Further study should also be undertaken to develop a testing medium which is both effective and reliable, whether it includes other well known personality instruments (i.e., Minnesota Multiphasic Personality Inventory, the California Psychological Inventory, the Strong Vocational Interest Banks, etc.), a combination of them or a complete new vehicle derived through extensive research and development.

In conclusion, it is this author's opinion that there presently exists a serious deficiency in the formulation and use of officer personality assessment techniques within the Navy. Testing being one approach to the solution. The effort to fill this need is apparent . . . an effort which is long overdue.

APPENDIX A

Frequency Distribution of Occupational Levels
and Representative Occupations

Occupational level	f	Representative Occupations
Professional	11	Accountant, teacher, clergy, lawyer
Semi-professional	6	Real estate broker, banker, Insurance, account executive
Business & Managerial	17	Company executive, city administration, consultant, retail proprietor
Sales	9	Insurance underwriter, wholesaler, manufacturer representative, retail sales
Skilled	10	Electrician, broadcaster, electronics technician, programmer
Semi-skilled	7	Company foreman, fireman, construction supervisor, rancher

APPENDIX B

The Manifest Needs Associated with Each of the 15 EPPS Variables. Excerpted from Edwards [15]

1. ACH Achievement: To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

2. DEF Deference: To get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

3. ORD Order: To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change.

4. EXH Exhibition: To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

5. AUT Autonomy: To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to avoid responsibilities and obligations.

6. AFF Affiliation: To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

7. INT Intraception: To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

8. SUC Succorance: To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.

9. DOM Dominance: To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

10. ABA Abasement: To feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered does more good than harm, to feel the need for punishment for wrong doing, to feel better when giving in and avoiding a fight than when having one's own way, to feel the need for confession of errors, to feel depressed by inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

11. NUR Nurturance: To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

12. CHG Change: To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

13. END Endurance: To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in order to get a job done, to put in long hours of work without distraction, to stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

14. HET Heterosexuality: To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or to tell jokes involving sex, to become sexually excited.

15. AGG Aggression: To attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong, to read newspaper accounts of violence.

APPENDIX C

EPPS PERCENTILE NORMS OF MEAN

SCORE	ach	def	ord	exh	aut	aff	int	suc	dom	aba	nur	chg	end	het	agg	con	SCORE
28																	28
27	MEN													99			27
26	N = 760						99		99					96			26
25							97		98			99		93			25
24	99				99	99	95		94		99	98	99	90			24
23	98				98	98	93		91		98	97	98	89	99		23
22	95			99	96	96	89		85	99	96	93	96	81	98		22
21	91			98	94	93	84	99	79	97	94	89	94	73	98		21
20	86		99	97	91	89	78	97	73	94	90	84	92	67	95		20
19	83	99	97	93	86	84	72	95	63	92	86	78	89	59	92		19
18	74	98	96	89	82	79	64	93	54	88	82	71	85	53	88		18
17	66	96	95	81	76	72	57	90	45	84	75	64	79	45	84		17
16	58	93	92	72	68	64	51	87	38	79	70	57	75	39	77		16
15	50	88	88	62	61	54	45	83	32	75	63	50	69	32	72	99	15
14	40	81	84	49	52	45	39	78	27	67	55	41	64	27	65	96	14
13	30	73	78	37	43	36	32	72	21	61	46	33	57	23	57	86	13
12	22	63	71	28	34	28	25	65	17	53	37	28	51	19	47	68	12
11	16	52	63	21	28	21	19	58	13	45	31	20	44	14	40	46	11
10	10	43	54	15	22	16	17	50	9	38	24	15	37	12	32	27	10
9	7	34	46	9	15	11	13	42	8	31	18	10	29	9	24	15	9
8	4	23	36	6	11	7	9	34	5	24	13	7	24	6	17	6	8
7	2	16	27	3	6	4	5	27	4	18	10	5	18	5	13	3	7
6	1	10	19	1	3	3	4	20	2	12	6	3	13	3	9	1	6
5		6	14		2	2	1	13	2	9	3	2	10	2	6		5
4		3	9		1	1		9	1	5	2	1	6	1	3		4
3		1	6					5		3	1		3		2		3
2			3					2		2			1		1		2
1			1					1		1							1
0																	0

The percentile corresponding to a given score is a measure of the score's relative position in the complete distribution of scores for the normative group.

APPENDIX D

EPPS T-SCORE CONVERSION DISTRIBUTION OF MEAN

SCORE	ach	def	ord	exh	aut	aff	int	suc	dom	aba	nur	chg	end	het	agg	con	SCORE
28	80	97	91	88	81	80	73	87	72	82	79	76	79	69	83		28
27	77	94	89	86	78	78	71	85	70	80	77	74	77	67	81		27
26	75	91	87	83	76	75	69	83	68	78	75	72	75	65	79		26
25	73	88	84	80	74	73	67	80	65	76	73	70	73	63	77		25
24	70	87	82	77	72	71	65	78	63	74	71	68	71	62	74		24
23	68	83	80	74	69	68	63	76	61	72	69	66	70	60	72		23
22	65	80	77	72	67	66	61	74	59	70	67	64	68	58	70		22
21	63	77	75	69	65	64	59	72	57	68	64	62	66	56	68		21
20	61	74	73	66	63	62	57	70	55	66	62	59	64	54	66		20
19	58	72	70	63	60	59	56	68	53	64	60	57	62	52	64		19
18	56	69	68	60	58	57	54	65	51	62	58	55	60	51	61		18
17	53	66	66	57	56	55	52	63	49	60	56	53	58	49	59		17
16	51	63	63	55	54	52	50	61	47	58	54	51	56	47	57		16
15	48	61	61	52	51	50	48	59	45	56	52	49	54	45	55	68	15
14	46	58	59	49	49	48	46	57	43	54	50	47	53	43	53	63	14
13	44	55	56	46	47	45	44	55	41	52	48	45	51	42	50	58	13
12	41	52	54	43	45	43	42	53	39	50	46	43	49	40	48	53	12
11	39	49	52	40	42	41	40	51	37	47	44	40	47	38	46	47	11
10	36	47	49	38	40	38	38	48	35	45	42	38	45	36	44	42	10
9	34	44	47	35	38	36	36	46	33	43	40	36	43	34	42	37	9
8	31	41	45	32	36	34	34	44	31	41	37	34	41	32	40	31	8
7	29	38	43	29	33	32	32	42	29	39	35	32	39	31	37	26	7
6	27	36	40	26	31	29	31	40	27	37	33	30	37	29	35	21	6
5	24	33	38	23	29	27	29	38	24	35	31	28	36	27	33	15	5
4	22	30	36	20	27	25	27	36	22	33	29	26	34	25	31	10	4
3	19	27	33	18	24	22	25	34	20	31	27	24	32	23	29	5	3
2	17	24	31	15	22	20	23	31	18	29	25	21	30	22	26	1	2
1	15	22	29	12	20	18	21	29	16	27	23	19	28	20	24		1
0	12	19	26	9	18	15	19	27	14	25	21	17	26	18	22		0

MEN N = 760

Raw score distributions on each variable converted into standard score distributions (T-scores) with a mean of 50 and a standard deviation of 10. T-scores falling between this range, i.e., 40-60, were considered average.

BIBLIOGRAPHY

1. Armore, S. J., Introduction to Statistical Analysis and Inference for Psychology and Education, New York: John Wiley & Sons, Inc., 1971.

2. Baken, D., "The Test of Significance in Psychological Research," Psychological Bulletin, 1966, 66, 423-437.

3. Baker, B. O., Hardyck, C. D., and Petrinovich, L. F., "Weak Measurements Vs. Strong Statistics: An Empirical Critique of S. S. Stevens' Proscriptions on Statistics," Educational and Psychological Measurement, 1966, 26(2), 291-309.

4. Barron, F., Creativity and Psychological Health, New York: D. Van Nostrad Company, Inc., 1963.

5. Bass, B. M., and Coates, C. H., "Forecasting Officer Potential Using the Leaderless Group Discussion," Journal of Abnormal And Social Psychology, 1952, 47, 321-325.

6. Borislow, B., "The Edwards Personal Preference Schedule (EPPS) and Fakability," Journal of Applied Psychology, 1958, 42, 22-27.

7. Cattell, R. B., The Scientific Analysis of Personality, Chicago: Aldine Publishing Company, 1970.

8. Clum, G. and Mahan, J. L. (U. S. Navy Medical Neuropsychiatric Research Unit, San Diego, California), "Attitudes Predictive of Marine Combat Effectiveness," Journal of Social Psychology, 1971, 83(1), 55-62.

9. Cook, F. J., The Warfare State, New York: The Macmillan Company, 1962.

10. Cooper, J. B. and McGaugh, J. L., Integrating Principles of Social Psychology, Cambridge, Mass.: Schenkman Publishing Company, 1963.

11. Cronbach, L. J., "Response Sets and Test Validity," Educational and Psychological Measurement, 1966, 6, 475-494.

12. Cronbach, L. J., Essentials of Psychological Testing, New York: Harper and Row, 1970.

13. Davis, S. W., "A Study of Combat Stress, Korea 1952," (Preliminary Report), Technical Memorandum ORO-T-41 (FEC), Operations Research Office, The John Hopkins University, Chevy Chase, Maryland, December 1952.

14. Dukes, W. F., "N=1," Psychological Bulletin, 1965, 64, 74-79.

15. Edwards, A. L., Manual for the Edwards Personal Preference Schedule, New York: The Psychological Corporation, 1959.

16. Egbert, R. L., Meeland, T., Cline, V. B., Forgy, E. W., Spickler, M. W., and Brown, C., "An Analysis of Combat Fighters and Non-fighters, Technical Report 44, HumRRO, Division 3, Presidio of Monterey, California, 1957.

17. Fuller, J. L. and Thompson, W. R., Behavior Genetics, New York: John Wiley & Sons, Inc., 1967.

18. Gauron, E. F., "Changes in Edwards Personal Preference Schedule Needs with Age and Status," Journal of Clinical Psychology, 1965, 21(2), 194-196.

19. Gleason, W. J., "Predicting Army Leadership Ability by Modified Leadership Group Discussion," Journal of Applied Psychology, 1957, 41, 231-235.

20. Glick, E. B., Soldiers, Scholars and Society, Pacific Palisades, California: Goodyear Publishing Company, Inc., 1971.

21. Huntington, S. P., The Soldier and the State, Cambridge: Harvard University Press, 1957.

22. Janowitz, M., The Professional Soldier, Glencoe, New York: The Free Press, 1960.

23. Lang, K., Military Institutions and the Sociology of War, Beverly Hills, California: Sage Publications Inc., 1972.

24. MacKinnon, D. W., "An Assessment Study of Air Force Officers," Part V: Summary and Applications, WADC Technical Report 58-91 (V), Wright Air Development Center, 1958.

25. Marshall, S. L A., "Men Against Fire," The Infantry Journal, Washington, D. C., 1947.

26. Merrill, R. M. and Heathers, L. B., "The Relations of the MMPI to the Edwards Personal Preference Schedule on a College Counseling Center Sample," Journal of Consulting Psychology, 1966, 20, 310-314.

27. Murray, H. A., et al., Explorations in Personality. A Clinical and Experimental Study of Fifty Men of College Age, New York: Oxford University Press, 1962.

28. Nuttin, J., "Motivation, Emotion and Personality," In P. Faisse, J. Piaget (Eds) Experimental Psychology, Its Scope and Method, New York: Basic Books, Inc., 1972.

29. Ogilvie, B. C. and Johnsgard, K. W., "The Competitive Racing Driver," American Journal of Sports Medicine, 1968, 8, 87-95.

30. Rosen, E., "Self-Appraisal, Personal Desirability, and Perceived Social Desirability of Personal Traits," Journal of Abnormal and Social Psychology, 1972, 52, 151-158.

31. Rosenthal, R. and Gaito, J., "The Interpretation of Levels of Significance by Psychological Researchers," Journal of Psychology, 1963, 55, 33-38.

32. Schachter, S., The Psychology of Affiliation, Stanford: Stanford University Press, 1970.

33. Severin, D. G., et al., "Measures of Combat Performance in Korea," I. Criterion Measures for Enlisted Men, Personnel Research Section Report 938, The Adjutant General's Office, Washington, D. C., April 1952.

34. Shoup, D. M., "The New American Militarism," The Atlantic Monthly, 223, April 1961.

35. Sines, J. O., "Actuarial Methods in Personality Assessment," In B. A. Maher (Ed.) Progress in Experimental Personality Research, New York: Academic Press, Inc., 1966.

36. Standish, A., "Crisis in Courage: I. Fighters and Non-fighters," U.S. Army Combat Forces Journal, April 1952.

37. Stouffer, S. A., et al., The American Soldier, Princeton: Princeton University Press, 1949.

38. Trites, D. K. and Sells, S. B., "Combat Performance: Measurement and Prediction," Journal of Applied Psychology, 1967, 41, 121-130.

INITIAL DISTRIBUTION LIST

		No. Copies
1.	Defense Documentation Center Cameron Station Alexandria, Virginia 22314	2
2.	Library, Code 0212 Naval Postgraduate School Monterey, California 93940	2
3.	Assoc. Professor F. M. Teti, Code 56Tt Department of Operations Research and Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
4.	Assoc. Professor J. A. Jolly, Code 55Jo Department of Operations Research and Administrative Sciences Naval Postgraduate School Monterey, California 93940	1
5.	LCDR H. M. Robertson, SC, USN 300 Reynolds Road Edmond, Oklahoma 73034	1